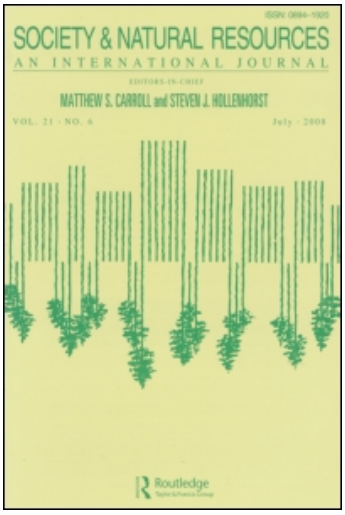

Society & Natural Resources
Publication details, including instructions for authors and subscription information:
http://www.informaworld.com/smpp/title~content=t713667234

Homebuyers and Wildfire Risk: A Colorado Springs Case Study

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Online publication date: 02 December 2009

To cite this Article Champ, Patricia Ann, Donovan, Geoffrey H. and Barth, Christopher M.(2010) 'Homebuyers and Wildfire Risk: A Colorado Springs Case Study', Society & Natural Resources, 23: 1, 58 — 70
To link to this Article: DOI: 10.1080/08941920802179766
URL: http://dx.doi.org/10.1080/08941920802179766

Society and Natural Resources, 23:58–70

ISSN: 0894-1920 print/1521-0723 online
DOI: 10.1080/08941920802179766

Routledge
Taylor & Francis Group

Insights and Applications

Homebuyers and Wildfire Risk: A Colorado Springs Case Study

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In recent years, the threat that wildfire poses to homes has received much attention in both the mainstream press and academic literature. However, little is known about how homebuyers consider wildfire risk during the home-purchase process. In the context of a unique wildfire education program, we consider two approaches to examining the relationship between wildfire risk and home purchases. Results from a market-level analysis using home sales price data are compared to household survey results. The household survey validates the market-level analysis and provides further insight into homebuyers and wildfire risk. Specifically, we find that while homebuyers prefer locations near dangerous topography, they also prefer less flammable building materials. However, most homebuyers were unaware of wildfire risk when they made their home-purchase decisions.

Keywords economics, environmental attitudes and concerns, hedonic price model, homebuyers, human behavior in the environment, survey methods, wildfire

Recent severe wildfire seasons in the western United States have increased public awareness of the dangers of wildfire. In particular, concern has focused on the wildland–urban interface, where homes abut forested lands and fuel loads are often elevated from decades of aggressive wildfire suppression. These increased fuel loads, along with years of drought and record-setting heat, have significantly increased the risk

Received 31 October 2007; accepted 29 January 2008.
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of wildfires. In addition, migration to areas proximate to national forests in the western United States has increased the numbers of homes at risk from wildfire (*New York Times*, June 26, 2007; Hammer et al. 2007). One policy response has been to institute programs that make homes less susceptible to wildfire by encouraging, or requiring, homeowners to use more fire-resistant building materials and to remove flammable vegetation from around their homes. Such programs have a common focus: They target people currently living in fire-prone areas. However, given the influx of people into fire-prone areas, it would seem appropriate to target potential as well as existing residents of fire-prone areas. Unfortunately, there is little information on the role of wildfire risk on home purchase decisions in fire-prone areas. Such information is crucial if policymakers wish to target potential, not just current, residents of fire-prone areas.

We present the results of a household survey of recent homebuyers in the fire-prone area of Colorado Springs, CO. We chose Colorado Springs for two reasons. First, in 2002, the City of Colorado Springs Fire Department instituted a comprehensive wildfire education campaign. As part of this unique campaign, parcel-level wildfire-risk ratings were estimated for every address in the fire-prone area of the city. Second, a previous hedonic price study (Donovan, Champ, and Butry 2007) examined the effect of wildfire risk on the housing market in Colorado Springs before and after the wildfire risk ratings were made available on the Web. The study results suggested that homebuyers' preferences with respect to wildfire risk were affected by the Colorado Springs Fire Department's FireWise program but left many questions unanswered. The household survey was designed to both validate and complement the Donovan, Champ, and Butry study by providing a richer understanding of the role of wildfire risk in home purchase decisions. Specifically, the survey provides insight into how informed homebuyers are about wildfire risk, the level of concern about wildfire risk during the home purchase process, and how this concern is related to past experience with wildfire.

In the next section we summarize the relevant literature on wildfire risk and homebuyers. Then we describe the study area, the Colorado Springs Fire Department's FireWise program, and the data. In the fourth section, we summarize the results of the hedonic price analysis. We then describe the household survey data. In the last section, we discuss the study results.

Wildfire and Homebuyers

The literature on wildfire risk and home purchases is thin. To our knowledge the Donovan, Champ, and Butry (2007) study is the only study to have directly estimated the impact of wildfire risk on housing prices. Loomis (2004) examined the effect of a large wildfire event on housing prices in a community that was 2 miles from the fire. By looking at housing prices 3 years before the wildfire and 5 years after the wildfire, Loomis found a significant drop in post-fire housing prices in the community proximate to the wildfire. Similar to the Loomis study, Mueller, Loomis, and González-Cabán (2009) considered the effect of wildfire events on home prices. They found that multiple forest fires cause home prices to decrease in the area near the fires. Unlike other natural disasters such as a flood or a hurricane, a wildfire event would likely reduce wildfire risk and we might expect an increase in housing sales prices if homebuyers are risk adverse and risk was their dominant concern. However, the observed decrease in home purchase prices after a wildfire event suggests homebuyers are probably responding to the visual impacts of wildfires.

Two studies, one on wildfire risk and one on flood risk, have focused on risk and home purchase decisions by directly surveying home owners. Vogt (2004) surveyed wildland–urban interface homeowners in California, Colorado, and Florida. Survey participants were asked to rate the level of consideration given to 11 structure and property attributes in the home purchase decision. Fire protection services such as firefighters and fire trucks received the highest average rating among all the attributes considered, while nonflammable roofing materials had the fourth highest rating for California and Colorado. The lot having few highly flammable trees had a relatively low rating in all three states. Chivers and Flores (2002) surveyed homeowners about their home purchase decision in a flood-prone area of Boulder, CO, and found that the individuals living in the special flood hazard area reported not understanding the risk when they purchased their homes. They found that only 8% of their study respondents learned of the potential flood risk associated with their home prior to making an offer on the home.

An Education Program in Colorado Springs

Colorado Springs is a city of 361,000 on the front range of the Rocky Mountains in Colorado, approximately 70 miles south of Denver. The study area covers 45 square miles on the western edge of the city bordered by the Pike National Forest, the Air Force Academy, and the Fort Carson Army Base. The elevation in this area varies between 6,000 and 6,800 feet, and the mean annual precipitation is 15 inches. The intermixed forest is predominantly ponderosa pine (*Pinus ponderosa*) and gambel oak (*Quercus gambelii*) with some Douglas-fir (*Pseudotsuga menziesii* var. *glauca*), particularly at higher elevations. The area has a mixed-severity fire regime: Fires can vary from ground fires that cause little or no overstory mortality to stand-replacing fires. In an average year, the 240,000-acre Pikes Peak Ranger District of the Pike National Forest, which borders the study area, experiences between 40 and 50 wildfire ignitions. However, very few of these ignitions exceed five acres because they are either suppressed by fire crews or because the rain that typically accompanies lightning in this area puts them out naturally. Since European settlement, the study area has experienced two major fires. In 1854, a fire started approximately 7 miles southwest of downtown Colorado Springs on Cheyenne Mountain and burned north through the study area before turning west toward the town of South Park. Although exact records are not available, the wildfire burned several hundred thousand acres. In 1950, a wildfire started while land was being cleared for a golf course. As a result, nine fire fighters died and 92 buildings were destroyed. Since 1950 the area has not had any significant wildfires. In addition, the Pike National Forest has not conducted any prescribed fire or mechanical fuel treatments in the area.

The Colorado Springs Fire Department recognized that individuals cannot be expected to make rational decisions about wildfire risk if they are not aware of the nature of the risk they face. The need to better inform its public about the risk of wildfire in the wildland–urban interface is clearly stated in the 2001 Colorado Springs Fire Department Wildfire Mitigation Plan:

> In general, the public does not perceive a risk from fire in the wildland–urban interface. Further, property owners believe that insurance companies or disaster assistance will always be there to cover losses.

> When people believe the government will protect them from natural hazards, the damage potential of a catastrophic event increases. Fire prevention efforts, official pronouncements, and media depictions of imminent risk have been shown to have little effect on those in danger. The effects of public education efforts have not been significant when compared to the need. Unless a catastrophic event occurs, wildland/urban interface protection issues generate little interest. (6)

In 2002, the Colorado Springs Fire Department began a unique project to rate the wildfire risk of 35,000 parcels in the wildland–urban interface and make the information available on a Web site. They believed that existing wildfire risk education efforts, which provided more general information, were ineffective, and that parcel-level wildfire risk assessments would provide the specific information needed to change homeowners' behaviors.

For each parcel, up to 25 variables were used to calculate an overall wildfire risk rating (low, medium, high, very high, or extreme). Although up to 25 variables are used, 6 variables largely determine a parcel's wildfire risk rating. These are, in order of importance, proximity to dangerous topography, roof material, composition and abundance of combustible vegetation around the house, siding material, average slope of the parcel, and defensible space around the home. In June 2002 the fire department posted the parcel-level wildfire risk ratings on the Web (http://csfd.springsgov.com). Homeowners could look up the wildfire risk rating of their house, or any other house, and receive information on how to mitigate wildfire risk. If homeowners take action to reduce the wildfire risk on their property, the fire department will reassess their wildfire risk rating. Since June 2002, the fire department has conducted several thousand reassessments. Although the Colorado Springs Fire Department's FireWise program was not specifically targeting individuals moving into the area, anecdotal evidence suggested that some homebuyers were using the Web site to compare the wildfire risk ratings of prospective properties (personal communication with Cathy Prudhomme, Colorado Springs Fire Department, January 27, 2005).

Since its launch, the average number of hits per day to the Colorado Springs wildfire risk rating Web site has increased every year from approximately 4,265 per day in 2002 to 12,858 per day in 2006. We cannot say that all these hits are coming from current and prospective homeowners in the Colorado Springs wildland–urban interface, but it is clear that the Web site has generated increasing interest.

A Hedonic Price Model

Hedonic price models were estimated to examine the relationship between the sale price of a home and attributes of the home (Donovan, Champ, and Butry 2007; see Table 1 for variable descriptions). In addition to the usual attributes (square footage, type of construction, school district), the models included the wildfire risk ratings. The wildfire risk ratings collected by the Colorado Springs Fire Department were combined with house sales, housing characteristics, and neighborhood characteristics data obtained from the El Paso County Assessor's office to estimate the hedonic price models. In the study area, 3,116 homes were sold between July 2002 (launch of the Web site) and September 2004. A typical house is 23 years old,

Table 1. Definition of independent regression variables

Variable	Description
CONDO	Dummy variable for construction style (1 if condo, 0 otherwise)
DUPLEX	Dummy variable for construction style (1 if duplex, 0 otherwise)
FRAME	Dummy variable for construction type (1 if frame, 0 otherwise)
TRACT	Dummy variable for construction quality (1 if tract or low, 0 otherwise)
MANSION	Dummy variable for construction quality (1 if mansion, 0 otherwise)
AGE	Year house was built subtracted from 2005
ROOMS	Number of rooms
BASEMENT	Finished basement square footage
ln(HOUSE)	Natural log of total above ground square footage
GARAGE	Garage square footage
H2	Dummy variable for school district (1 if Harrison 2, 0 otherwise)
CS11	Dummy variable for school district (1 if Colorado Springs 11, 0 otherwise)
A20	Dummy variable for school district (1 if Academy 20, 0 otherwise)
ln(LOT)	Natural log of lot square footage
BUSY_MEDIUM	Dummy variable for traffic volume (1 if medium, 0 otherwise)
BUSY_HIGH	Dummy variable for traffic volume (1 if high, 0 otherwise)
SALE_03	Dummy variable for sale year (1 if 03, 0 otherwise)
SALE_04	Dummy variable for sale year (1 if 04, 0 otherwise)
EXTREME	Dummy variable for fire risk rating (1 if extreme, 0 otherwise)
VERY_HIGH	Dummy variable fire risk rating (1 if very high, 0 otherwise)
HIGH	Dummy variable for fire risk rating (1 if high, 0 otherwise)
MODERATE	Dummy variable for fire risk rating (1 if moderate, 0 otherwise)
TOP_HIGH	Dummy variable for distance to dangerous topography (1 if < 30 feet, 0 otherwise)
TOP_MEDIUM	Dummy variable for distance to dangerous topography (1 if 30–100 feet, 0 otherwise)
ROOF	Dummy variable for roofing material (1 if wood, 0 otherwise)
SIDING	Dummy variable for siding material (1 if wood, 0 otherwise)

(*Continued*)

Table 1. Continued

Variable	Description
VEG_HIGH	Dummy variable for veg. density within 30 feet of house (1 if dense, 0 otherwise)
VEG_MED	Dummy variable for veg. density within 30 feet of house (1 if moderately dense, 0 otherwise)
SLOPE	Average slope (%) within 150 feet of house

Note. This table is Table 1 in Donovan, Champ, and Butry (2007) and is used with permission.

Table 2. Regression results for overall wildfire risk rating model ($n = 3116$)

Variable	Coefficient	Standard error	p Value	Marginal effect ($)[a]
CONSTANT	6.95	0.250	<.0001	
CONDO	4.22E-02	2.03E-02	.0376	12,947
DUPLEX	−6.80E-02	2.70E-02	.0120	−19,566
FRAME	−3.65E-02	1.27E-02	.0040	−11,160
TRACT	−0.160	1.24E-02	<.0001	−43,684
MANSION	2.04E-01	1.31E-02	<.0001	68,937
AGE	−1.41E-03	2.45E-04	<.0001	−422
ROOMS	−4.53E-05	2.58E-03	.986	−14
BASEMENT	1.32E-04	5.70E-06	<.0001	39
ln(HOUSE)	0.433	1.37E-02	<.0001	66
GARAGE	1.33E-04	1.89E-05	<.0001	40
H2	−9.19E-02	6.35E-02	.148	−29,035
CS11	−5.85E-02	1.44E-02	<.0001	−18,841
A20	−1.06E-01	1.76E-01	<.0001	−33,221
ln(LOT)	4.76E-02	3.70E-03	<.0001	1
BUSY_MEDIUM	−1.15E-02	8.92E-03	.197	−3,419
BUSY_HIGH	1.97E-02	1.06E-02	.0630	5,964
SALE_03	2.48E-02	8.17E-03	.0024	7,531
SALE_04	8.37E-02	9.00E-03	<.0001	26,316
EXTREME	1.79E-02	1.75E-02	.308	5,414
VERY_HIGH	2.18E-02	1.52E-02	.153	6,608
HIGH	1.73E-02	1.36E-02	.205	5,230
MEDIUM	6.70E-03	1.26E-02	.594	2,013
R-squared	0.871			
ρ	0.143	2.00E-02	<.0001	
λ	0.373	2.54E-02	<.0001	

Note. Dependent variable is ln(sale price). This table is Table 4 in Donovan, Champ, and Butry (2007) and is used with permission.

[a]The marginal effects were estimated based on the means of the independent variables.

has 7.8 rooms, 3.5 bedrooms, and 2.9 bathrooms, is 1,959 square feet, and has a 12,914 square foot lot. The mean sale price was $289,976.

One hedonic price model included the overall wildfire risk rating variables (Table 2) and another included some of the underlying variables that comprise the overall wildfire risk ratings (Table 3). Both models were found to have spatial processes that were corrected (see Donovan, Champ, and Butry 2007 for details). Both models suggest having a larger basement, lot, and above-ground square footage increased the sale price. Condominiums also sold for more. However, duplexes, frame construction (relative to masonry construction), older homes, and two of the school districts reduced the estimated sale price of homes. The overall wildfire risk variables did not have a significant effect on estimated sale prices (Table 2).

Table 3. Regression results with component wildfire risk rating variables ($n = 3116$)

Variable	Coefficient	Standard error	p Value	Marginal effect ($)[a]
CONSTANT	7.01	0.248	<.0001	
CONDO	3.77E-02	1.96E-02	.0545	11,635
DUPLEX	−6.37E-02	2.64E-02	.0157	−18,533
FRAME	−3.12E-02	1.26E-02	.0135	−9,592
TRACT	−0.165	1.22E-02	<.0001	−45,318
MANSION	1.89E-01	1.27E-02	<.001	63,819
AGE	−1.19E-03	2.40E-02	<.0001	−359
ROOMS	1.41E-04	2.59E-03	.957	43
BASEMENT	1.28E-04	5.85E-06	<.0001	39
ln(HOUSE)	0.432	1.37E-02	<.0001	67
GARAGE	1.34E-04	1.88E-05	<.0001	41
H2	−9.58E-02	6.76E-02	.156	−30,595
CS11	−6.32E-02	1.41E-02	<.0001	−20,564
A20	−1.07E-01	1.77E-02	<.0001	−33,954
ln(LOT)	4.57E-02	3.70E-03	<.0001	1
BUSY_MEDIUM	−1.20E-02	8.76E-03	.172	−3,597
BUSY_HIGH	1.05E-02	1.09E-02	.3380	3,190
SALE_03	2.60E-02	8.10E-03	.0013	7,969
SALE_04	8.48E-02	9.07E-03	<.0001	29,906
TOP_HIGH	7.81E-02	1.22E-02	<.0001	24,682
TOP_MEDIUM	2.67E-02	8.60E-03	.0019	8,187
ROOF	−1.66E-02	9.19E-03	.0702	−4,963
SIDING	−2.05E-02	9.44E-03	.0297	−6,115
VEG_HIGH	2.70E-03	1.25E-02	.829	817
VEG_MED	1.10E-02	9.00E-03	.221	3,342
SLOPE	−1.17E-03	9.78E-04	.231	−353
ρ	0.141	2.00E-02	<.0001	
λ	0.364	2.57E-02	<.0001	
R-squared	0.873			

Note. Dependent variable is ln(sale price). This table is Table 6 in Donovan, Champ, and Butry (2007) and is used with permission.

[a]The marginal effects were estimated based on the means of the independent variables.

This result is not surprising as the overall risk variables encompass both attributes that may be considered positively, such as views from ridges, and attributes that may be considered negatively, such as a flammable roof.[1] The model with the component risk variables (Table 3) suggests that living proximate to dangerous topography increases sales prices, whereas wood roofing and siding decrease sales prices. These opposing effects are likely responsible for the insignificance of the overall risk variables. The density of the vegetation near the home did not have an effect on the estimated sale prices.

A Household Survey

Sampling Procedures

A mail survey was developed to complement and validate information provided by the hedonic price analysis. The sample frame for the household survey was the hedonic study population: the 3,116 homes in Colorado Spring's wildland–urban interface that sold between July 2002 and September 2004. A random sample of 898 households was drawn from this population. The sample had a distribution of wildfire risk similar to that of the population (Table 4).

Mailing Procedures

The initial survey packet included the survey instrument, a cover letter signed by the Fire Chief of the City of Colorado Springs Fire Department, and a postage paid return envelope. The first survey wave ($n = 898$) was mailed on November 8, 2006. A second survey packet ($n = 534$) was mailed to nonrespondents on December 1, 2006.

The overall response rate of 52% was quite good, especially for just two mailings. Five percent of the survey packets were returned as "undeliverable," and 3% of the sample had ZIP codes that were not in the Colorado Springs wildland–urban interface. With any survey that doesn't have a 100% response rate, nonresponse bias is a concern. The issue is whether the pool of nonrespondents is systematically different from the pool of respondents on relevant measures. Although we did not conduct a formal investigation of nonresponse bias, it is a promising result that respondents had a distribution of wildfire risk ratings that was similar to the initial sample (see Table 4).

Table 4. Overall wildfire risk ratings

Rating	Homes sold post July 2002 in Colorado Springs WUI ($n = 3116$) (%)	Random sample ($n = 898$) (%)	Respondent pool ($n = 430$) (%)
Extreme	8	7	9
Very high	17	18	18
High	38	37	37
Moderate	36	36	35
Low	1	1	1

Table 5. Distribution of response to wildfire risk attributes

Attribute	Very undesirable 1 (%)	2 (%)	3 (%)	4 (%)	Very desirable 5 (%)	Mean rating (%)
Wood roof	56	24	18	1	1	1.66
Wood siding	34	25	36	5	1	2.15
Dense vegetation near the house	22	25	35	12	6	2.54
Proximity to the foothills	3	4	21	32	40	4.01
Location on a ridge	9	14	38	18	20	3.25

Demographic Characteristics of the Survey Respondent Population

Survey respondents were well educated and affluent. All respondents had graduated from high school and 37% had advanced degrees. Forty-four percent had a household income above $100,000. Most (79%) were married and about half (51%) of the respondents were male. A majority (54%) were employed full-time. A Web site seems like a reasonable approach to communicating wildfire risk to the study population as 94% of the respondents had access to the internet from their home and 86% of these respondents accessed the internet daily.

Wildfire and Purchasing a Home

The hedonic analysis showed that wood roofs and siding were associated with reduced sale prices of homes, while proximity to dangerous topography was associated with an increase the sale prices (Table 3). To validate these results, the survey respondents were asked to rate the desirability of house attributes that can affect wildfire risk on a 5-point scale (1 = very undesirable, 5 = very desirable) (Table 5). Consistent with the hedonic analysis, wood roofing and wood siding were rated as undesirable characteristics, whereas proximity to the foothills and location on a

Table 6. Distribution of actual and perceived overall wildfire risk ratings ($n = 425$)

Rating	Actual (%)	Perceived (%)
Extreme	9	4
Very high	19	9
High	38	20
Moderate	34	47
Low	1	21

Note. A 5×5 contingency table analysis of actual by perceived wildfire risk ratings resulted in a Pearson $\chi^2 = 89.713$ (p value $< .001$), suggesting rejection of the null hypothesis that actual and perceived wildfire risk ratings are independent.

ridge were rated as desirable. Dense vegetation was rated more undesirable than desirable.

Further analyses of the survey data suggest that although homebuyer preferences were consistent with the hedonic price model results, a more complicated story unfolds when other survey measures are considered. Only 27% of the survey respondents realized the house they were purchasing was in an area at risk of wildfire before making an offer on the home. Furthermore, 67% did not realize they had purchased in an area at risk of wildfire until after they moved into the home. Very few of the

Table 7. Actual overall wildfire risk rating and survey measures by concern about wildfire risk when purchasing a home

Parameter	Concerned about wildfire risk when purchasing home (%)	Not concerned about wildfire risk when purchasing home (%)
Actual overall wildfire risk rating ($n = 426$)		
Extreme	20	6
Very high	27	16
High	27	41
Moderate	25	36
Low	1	1
Pearson $\chi^2 = 28.822$; p value $<.001$		
Perceived overall wildfire risk rating ($n = 428$)		
Extreme	11	2
Very high	18	5
High	28	17
Moderate	34	51
Low	9	25
Pearson $\chi^2 = 58.051$; p value $<.001$		
Have you ever owned a home, other than your current home, in Colorado or elsewhere that was located in an area at risk of wildfire? ($n = 421$)		
Yes	47	31
No	53	69
Pearson $\chi^2 = 9.360$; p value $=.002$		
Do you know anyone who has been evacuated from his or her home due to a wildfire? ($n = 424$)		
Yes	48	40
No	52	60
Pearson $\chi^2 = 2.357$; p value $=.124$		
Do you know anyone whose home has been damaged or lost due to a wildfire? ($n = 424$)		
Yes	16	19
No	84	81
Pearson $\chi^2 = .524$; p value $=.469$		

Note. Pearson χ^2 statistics are based on two-way contingency table analyses (i.e., frequencies) to test the independence of rows and columns.

survey respondents (less than 1%) had accessed the Colorado Springs Fire Department's FireWise Web site during the home purchase process. Eventually residents accessed the Web site, as 16% of the survey respondents said they had visited the Web site. Given the focus of the Colorado Springs Fire Department's education campaign on current residents with higher wildfire risk ratings, it is not surprising that most of those who had accessed the Web site lived on lots with high to extreme wildfire risk ratings.

We would not expect homebuyers to know the wildfire risk rating of a particular home if they had not accessed the Colorado Springs Fire Department's FireWise Web site, and indeed a comparison of actual overall wildfire risk ratings to what survey respondents said they thought was their rating (perceived wildfire risk rating) suggests that survey respondents underestimated the overall wildfire risk rating of their homes (Table 6). In particular, 21% of the respondents thought they had low ratings when in fact only 1% did, while only 13% thought they had extreme or very high wildfire risk rating when actually 27% had extreme or very high wildfire risk ratings.

Although it is apparent that most survey respondents did not have much knowledge of wildfire risk when they purchased their home, most survey respondents (75%) also said they were not concerned about wildfire risk when they purchased their home. Those who were concerned about wildfire risk when they purchased their home had good reason for concern as they were more likely to purchase homes with extreme or very high wildfire risk ratings (Table 7). We might expect previous experience with wildfire to influence homebuyer concern about wildfire risk. Most (65%) of the survey respondents had not owned a home in a fire-prone area prior to moving into their current residence in Colorado Springs. Although many (42%) of the survey respondents knew someone who was evacuated from her home due to a wildfire, only 18% knew anyone whose home had been damaged or lost due to a wildfire. Survey respondents who had previously owned a house in a location at risk of wildfire were more likely to be concerned about wildfire risk when they purchased their current home (Table 7). However, knowing someone who was evacuated from her home due to a wildfire or knowing anyone whose home had been lost or damaged due to a wildfire did not have a statistically significant relationship with being concerned about wildfire risk. These results suggest that personal experience is more strongly related to concern about wildfire risk during the home purchase process than knowledge of others' experiences with wildfire. Perhaps this is why, despite so much media coverage of wildfires, so few individuals were aware of or concerned about wildfire risk when they purchased their home in a fire prone area.

Discussion

Although hedonic models are commonly estimated, it is rare to have household-level data that allow for a closer look at how a market is working. The hedonic models allowed us to unbundle the confounding effects of wildfire risk and positive amenity values. Homebuyers in Colorado Springs were paying a premium for homes near dangerous topography because of the amenity values. However, flammable building materials significantly reduced home sale prices. It was not clear from the hedonic analysis if the preference for less flammable building materials was driven by concerns about wildfire risk.

Although homeowners living in the wildland–urban interface are at risk of losing their home to a wildfire, the survey results suggest many homebuyers move into these areas without understanding the risk. We found that only 27% of the homebuyers in our study realized they were purchasing a home in an area at risk of wildfire prior to making an offer on the house. While this is substantially more than the 8% of respondents in the Chivers and Flores study of home purchases in a flood plain, it is, nevertheless, a small percentage of the study population. In addition, study participants underestimated the current wildfire risk of their homes.

Although information was freely available to homebuyers on the overall wildfire risk of parcels, most homebuyers did not know about the Colorado Springs Fire Department's FireWise Web site and did not compare the wildfire risk ratings of different homes. We asked an open-ended question about what would have been a good way for the Colorado Springs Fire Department to let homebuyers know about the Web site. The most common response was that respondents wanted to get this information from their Realtors. However, Realtors have little incentive to talk with potential buyers about wildfire risk, as Colorado does not have a disclosure law that requires wildfire risk be revealed to the homebuyer. It may seem intuitive that a wildfire risk disclosure law would impact home purchase decisions in fire prone areas; however, it is not a foregone conclusion. The Chivers and Flores study showed that despite a disclosure law about flood-plain risk, homebuyers did not know about the risk early enough in the home purchase process to do anything about it.

The results of this study beg the question of whether homebuyers would make a different home purchase decision if they were fully informed about wildfire risk. Although homebuyers do not necessarily seek out homes with high wildfire risk ratings, it does appear that homebuyers prefer homes proximate to dangerous topography (e.g., on a ridge), and the strength of these preferences in the current context of wildfire risk would need to be weighed against the chances that a homeowner would lose the home to a wildfire and how unpleasant homeowners find that possibility. Future research will have to address this issue.

Note

1. Prior to the launch of the Web site, wildfire risk and house price were positively correlated, which suggests that positive amenity values associated with higher wildfire risk outweighed the negative effect of wildfire risk.

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